

Business Case

A Corporate Approach to Electronic Information Management (EIM)

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Executive Summary

The Need

More and more, delivering on the government's commitment to Albertans depends on collaboration among ministries. However, collaboration may be hindered by *ad hoc* and weak management of information assets across the government.

Currently, ministries lack the information management tools that will enable them to:

- ensure that information resources are accessible by staff, clients and business partners, not only within individual programs and ministries, but across ministries;
- apply systematic rights of access to:
 - enable the fullest use of individual resources where appropriate,
 - restrict access to personal and other sensitive information where required by the *Freedom of Information and Protection of Privacy Act*, and
 - protect the evidentiary integrity of official records; and
- reduce the escalating costs associated with access to, management, and storage of these resources.

The Opportunity

A corporate approach to Electronic Information Management (EIM)¹ will position the Government of Alberta to manage information resources in a consistent manner to support service delivery and enable ministries to implement EIM at a lower cost.

EIM introduces the required consistent and systematic approach to managing all information assets, regardless of the medium in which they are held, throughout their entire life cycle. As a result, it will be easier:

- for people to do their work;
- for the general public, contractors and governance groups to gain access, when authorized, to government information; and
- for ministries to meet their accountability requirements.

¹ Electronic information management (EIM) is used here to emphasize the breadth of information to be managed. In other contexts, and within some ministries, this is referred to as Electronic Records and Electronic Document Management (ER/EDM). EIM is intended to emphasize the need to manage all digital assets of the government and to integrate information in digital format and information in hard media formats (e.g. paper).

The Urgency

Several ministries have begun implementing electronic records and electronic document management systems. Others, while realizing the need, do not have sufficient resources to research, plan, and implement EIM at this time.

A prudent investment strategy is to leverage the experience of the early adopters of this business solution to provide an implementation framework and tools to assist other ministries.

Without a consistent framework, the government risks:

- increased costs;
- an inability to meet service delivery commitments;
- incomplete or inconsistent solutions;
- reduced productivity; and
- potential failure to meet legislative requirements.

Project Description

The proposed project is to develop a corporate approach for electronic information management (EIM) within the Government of Alberta. The approach will include:

- core business and functional requirements that EIM applications must support,
- policies, standards, and practices related to the use of EIM within ministries; and
- implementation approaches and tools, including training materials, for ministries.

The project will also assess capabilities of commercially available EIM application software systems needed to effectively manage electronic documents, web content, paper files and other information in government and qualify vendors of record that meet the government's requirements.

As a result, ministries will be able to reduce the time and effort to (a) develop their business cases (b) decide among competing solutions, and (c) implement electronic information management to meet service commitments.

This project does NOT include the implementation of EIM across ministries. It is anticipated that individual ministries will move forward as business requirements demand and resources are allocated.

Strategic Alignment

The project is aligned with the government's commitment to Albertans in its corporate business plan and the commitments made in individual ministry business plans.

The project is also essential if the goals and objectives of the government's ICT Strategy and the Government of Alberta Information Management Framework are to be achieved.

Alternatives

Three alternatives to meet the challenge of electronic information management are considered:

1. **Status Quo:** Under this scenario, ministries simply make the decision to invest and implement EIM on an "as needed" and "as can afford" basis and there is no corporate framework to guide the adoption and implementation of EIM. As a result, this alternative raises the costs of EIM significantly because each ministry must develop/adapt functional requirements. As well, corporate requirements (e.g. digital archives) may not get addressed or may be addressed only in an *ad hoc* manner.
2. **Corporate Approach.** This approach invests in the development of functional requirements, policies, standards, and implementation frameworks once and then applies these to the various businesses across the government. This approach also leverages the experience of early adopters in validating the functional requirements. This "up-front" investment is planned over a two-year period (subject to funding).
3. **Accelerated Corporate Approach.** The accelerated corporate approach simply accelerates the development of functional requirements and associated policies, standards and practices. By making the "up-front" investment over a period of one-year, ministries who are delaying decisions until this work is done can implement more quickly.

Cost-Benefit

Other public sector organizations have realized a return on investment in EIM within 18-24 months. Appendix 3 contains a cost/benefit analysis for EIM based on best available industry data and organizations that have implemented EIM.

A comparison of the three approaches considered is presented in Table ES-1.

Table ES-1
Summary of Costs

Summary of Quantitative Cost/Benefit	Alternative 1: Status Quo	Alternative 2: Corporate Approach	Alternative 3: Accelerated Corporate Approach
Net Present Value of Project	\$ (12,700,000)	\$ (672,314)	\$ (640,909)

If the status quo persists, the government will risk spending \$12.7 million dollars to have each ministry unnecessarily conduct the same groundwork for EIM². The proposed approach (Alternative 2) reduces this cost by 95% while reducing the risk associated with the lower cost alternative (Alternative 3).

Detailed information on costing is included in Appendix 3.

Conclusion

A wise investment strategy is to invest in the development of a corporate framework, including required functionality, guidelines and standards, and implementation tools for ministries.

This corporate approach to EIM proposed here will:

- enable a consistent and integrated approach that supports business requirements and service delivery, and
- significantly reduce costs and accelerate the benefits to ministries.

Recommendations

Three recommendations emerge from this business case:

1. Invest in the "Corporate Approach", as it produces a greater business and operational impact while managing risk.
2. Ensure the Corporate Approach to an EIM project is identified in the Cross-government CIO's ICT strategy, making it a corporate priority for all Ministries to participate in its success.
3. Funding for the project should be provided by Alberta Government Services and Alberta Innovation and Science.

² This amount does NOT include the cost of implementation. It is the cost of developing functional requirements, policies, guidelines and practices for EIM. However, the estimate DOES assume that there is sharing of information between ministries and learning from one ministry to another. As such, the cost is less than 22 times the cost of developing functional requirements, policies and guidelines.

Problem / Opportunity*The Challenge*

The business goals of the Government of Alberta rely heavily on collaboration among ministries. To meet these commitments, it is critical that a consistent electronic information management environment be established to support collaboration and service delivery.

At the same time, the work environment within ministries is characterized by a rapidly increasing volume of information, decentralized management of information as a result of information technology tools at the desktop, and increasing demand for information from clients and stakeholders. Without effective management of electronic information, ministries face an increasing risk of losing information and not meeting their commitments to Albertans.

Finally, while the current shift towards e-Government promises to transform the efficiency and effectiveness of government services and program delivery, it requires fundamental changes in information management to succeed.

The Opportunity

Electronic Information Management (EIM)³ will position the Government of Alberta to manage information resources in a consistent manner to support service delivery.

EIM will make it easier:

- for people to do their work;
- for the general public, contractors and governance groups to gain access, when authorized, to government information; and
- for ministries to meet their accountability requirements.

This can be achieved by creating a sustainable electronic information management environment, in which documents and records of decisions are properly managed throughout their entire lifecycle, and are readily available when needed.

³ Electronic information management (EIM) is used here to emphasize the breadth of information to be managed. In other contexts, and within some ministries, this is referred to as Electronic Records and Electronic Document Management (ER/EDM). EIM is intended to emphasize the need to manage all digital assets of the government and to integrate information in digital format and information in hard media formats (e.g. paper).

Why a Corporate Approach?

Several ministries (e.g., Government Services, Learning, and Transportation) have begun implementing electronic records and electronic document management systems. Others, while realizing the need, do not have sufficient resources to research, plan, and implement EIM at this time. There is a clear opportunity to leverage the experience of the early adopters of this business solution to provide an implementation framework and tools to assist other ministries.

A corporate approach to EIM will

- reduce the costs to ministries by establishing business and functional requirements once;
- speed the development and implementation of EIM within ministries; and
- ensure the approach taken is comprehensive and consistent to facilitate cross-ministry initiatives.

Current Situation

Currently, staff face a paradoxical situation: The more technology systems they have, and the more documents they create or collect, the harder it is for them to find relevant information⁴. This situation frustrates employees and makes their job more difficult. It also places ministries at risk for not being able to account for decisions made.

Additionally, business units often need to share a document, which only exacerbates the problem. As a result, many business units are filing duplicate copies of documents. In some cases, entire files are copied. This proliferation of paper and the requirement to share documents only reinforces the need to centralize the storage of the original documents and make them available, through secured electronic means, for retrieval and viewing.

At present, *ad hoc* information management practices prevail within most ministries. Few information management practices and procedures are applied consistently and effectively across all media and across the government.

This current environment is characterized by:

- a frequent inability to locate and identify authoritative versions of documents, often because of the absence of data enabling users to determine a given record's origins, level of approval, or whether it is the latest, most complete or relevant version;

⁴ A recent Delphi Group survey (February 2002) estimates that most, if not all, management-level employees spend 25% of their business day searching for information. More than 60% of people surveyed "agree that finding information was a difficult process, and much of the time they cannot find the information they need to do their jobs".

- pervasive management of records and data as “my” records or “my program’s” rather than corporate assets, resulting in a failure to leverage, through sharing and re-use, the public investment made in creating and maintaining these assets;
- limited knowledge of what records and data exist and where they are located;
- increased copying, modification, and storage of electronic records and hardcopy versions across organizations, applications and media with accompanying escalation of costs associated with storage and use;
- separate and distinct search processes for structured data, desktop records and hardcopy records, associated with an overall tendency to manage information resources according to their physical form rather than as *information*;
- limited integration of information management, e-forms processes, workflow management and other collaborative tools;
- limited application of security classifications to records; and
- potential failure to meet the requirements of the *Historical Resources Act* to ensure that records having permanent value be preserved and transferred to the Provincial Archives when no longer in use by originating ministries and agencies.

In short, ministries lack the information management tools that will enable them to:

- ensure that information resources are accessible by staff, clients and business partners, in particular the right information at the right place at the right time, not only within individual programs and ministries, but across ministries;
- apply systematic rights of access to:
 - enable the fullest appropriate use of individual resources where appropriate,
 - restrict access to personal and other sensitive information where required by the *Freedom of Information and Protection of Privacy Act*, and
 - protect the evidentiary integrity of official records; and
- reduce the escalating costs associated with access to, management, and storage of these resources.

Overview of Electronic Information Management Systems (EIMS)

What is EIM?

Electronic information management (EIM) introduces the required consistent and systematic approach to managing information throughout its entire life cycle (see Table 1).

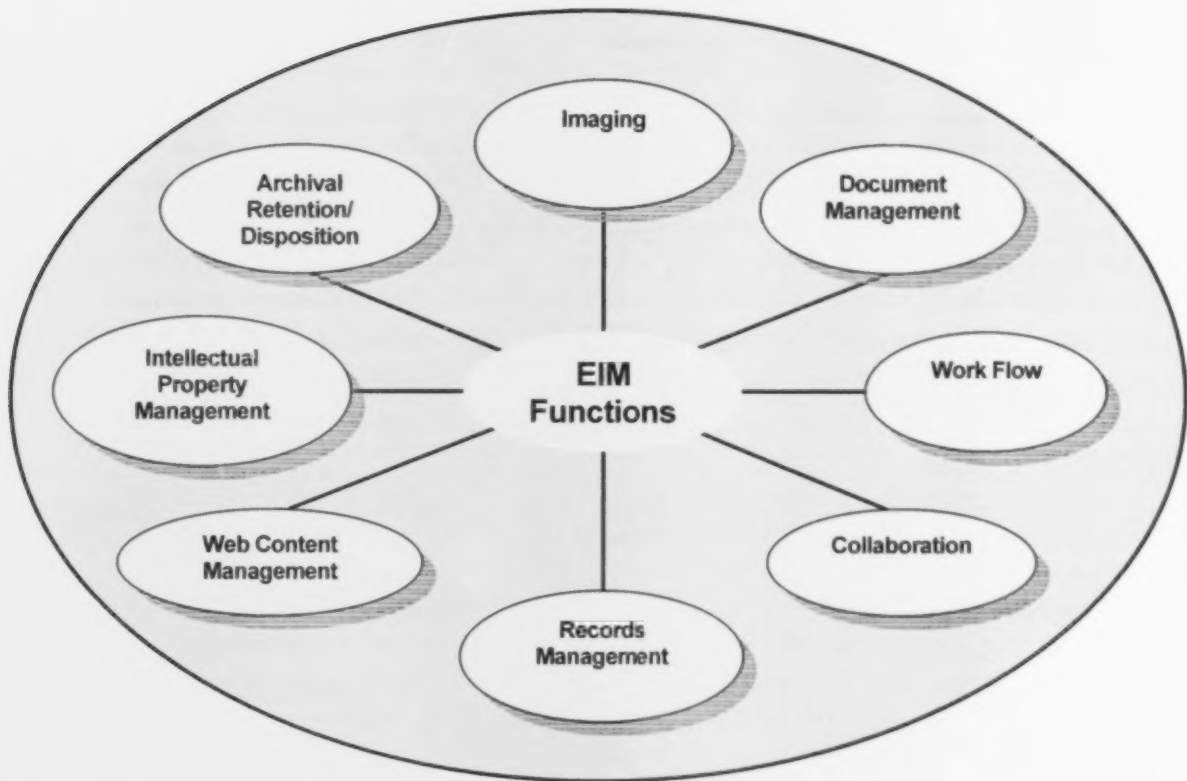
Table 1
Electronic Information Management Capabilities

EIM:

- Provides a Web-based single point of access for all information required by business users in one window.
- Provides automated controls of documents and other information throughout their life cycle (creation and receiving; processing and using; storing and retrieving; distributing and publishing; retaining and disposing).
- Links information to programs, services and transactions as it is captured into the system by users.
- Enables multi-function searching for information located within ministries.
- Enables the creation of metadata profiles (descriptions) of structured data and other information that cannot be physically captured electronically within EIM.
- Offers security and updating and access tracking features for electronic documents and records through version control, and "check-in" and "check-out" features.
- Protects and ensures the integrity of documents through user profiling, and audit trails.
- Incorporates workflow, linking and collaboration in Web-based environments, permitting application integration with other corporate systems.
- Provides automatic purging of electronic documents when retention requirements are met while expediting disposal of paper files through automated completion of associated paperwork and prompts to program staff.
- Provides prompt, thorough and efficient transfers of documentary resources to low-cost inactive storage or to the Provincial Archives in accordance with records retention and disposition schedule requirements.

EIM enables the integration of various information management functions as illustrated in Figure 1.

Figure 1
Business Functions Supported by EIM



Scope of information to be managed

The EIM solution applies to all recorded information, regardless of the medium in which it is held (see Table 2).

Table 2
Information Managed by EIM

Through EIM, organizations can manage the following range of information in one place:	
• Hardcopy records/publications	• Micrographic records
• Videotapes and sound tapes	• Hardcopy maps, plans and photographs
• Word processing documents	• Static images and graphics
• Web pages	• Digitized sound and video clips
• E-mail messages and attachments	• Project plans
• Spreadsheets	• Documents with embedded objects
• Presentations	• Data files from CAD/CAM applications
• Desktop publishing documents	• Digital maps and plans
• PDF formatted documents	• Desktop office application databases
• Scanned images	• E-forms
• Metadata of structured databases	

The Benefits

EIM will:

- provide critical support to e-government, including the ability to share and re-use knowledge at the program, ministry, and enterprise levels, with the government's public and private sector partners, and with the public;
- improve government accountability and transparency through ensured availability of records in all media;
- improve the design and delivery of policy and program benefits (both within the context of integrated service delivery and at individual program level);
- reduce risk (e.g., legal, fiscal, public policy design, and program delivery);
- enhance the security of information;
- enable consistent adherence to legislative and policy requirements (e.g., *Freedom of Information and Protection of Privacy Act*; *Historical Resources Act*); and
- reduce costs related to locating, retrieving and managing electronic information.

Summary

The Government of Alberta needs a consistent and comprehensive way to manage information assets to support service delivery and its commitments to Albertans. Electronic Information Management (EIM) supports core functions to meet this need and to manage information as a corporate asset. If the current situation persists, the government will be at risk of not meeting its commitments.

While some ministries have begun to implement EIM, others are waiting for guidance, given the commitment of resources necessary for effective implementation.

A wise investment strategy is to invest in the development of a corporate framework, including required functionality, guidelines and standards, and implementation tools for ministries. This corporate approach will reduce costs and ensure a consistent approach that can be leveraged to support collaboration across government.

Project Description

The proposed project is to develop a corporate framework for electronic information management (EIM) within the Government of Alberta. The framework will deliver:

- core business and functional requirements that EIM applications must support,
- policies, standards, and practices related to the use of EIM within ministries; and
- implementation approaches and tools for ministries.

The project will also assess capabilities of commercially available EIM application software systems needed to effectively manage electronic documents, web content, paper files and other information in government and qualify vendors of record that meet the government's requirements.

As a result, ministries will be able to reduce the time it takes to (a) develop their business cases (b) decide among competing solutions, and (c) implement electronic information management to meet service commitments.

The project will be divided into two phases (see Table 3). These phases are illustrated in Appendix 5.

Table 3
EIM in the Government of Alberta

Phase	Activities	Timing
1. Develop Corporate Approach	• Business Requirements • Functional Requirements • Draft Policies and Standards • Implementation Approaches	2003-2004
2. Proof of Concept and Implementation Framework	• Pilot/Validate Functional Requirements; Policies and Standards • Implementation Tools for Ministries • Digital Archives Strategy • RFP for Services/Applications • Qualify Vendors of Record	2004-2005

Objectives Scope and Anticipated Outcomes

Phase 1

Objectives

The objectives of Phase 1 are to develop:

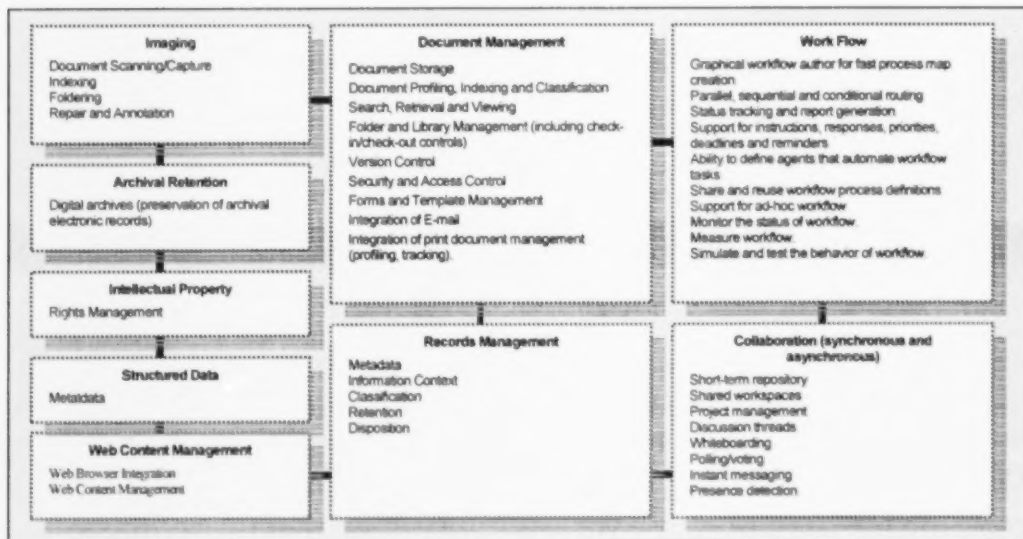
- corporate EIM functional requirements;
- draft EIM policies, standards, guidelines and practices;
- an accountability framework for EIM; and
- an implementation framework for ministries.

Scope

Functional requirements for EIM: These functional requirements should establish mandatory and desirable requirements for the application of EIM.

Areas where integrated functional requirements are needed are illustrated in Figure 2.

Figure 2
EIM Integrated Functionality



Policies, standards, guidelines: For consistency, corporate policies, standards and guidelines related to electronic information management need to be developed for each of the functional business requirements identified. Policies will establish common rules, while standards will identify minimum practices that must be met. Guidelines will identify "best practices" related to electronic information management.

Accountability Framework: An accountability framework will identify roles and responsibilities for those involved in managing electronic information – including roles for executive responsibility, professional communities (e.g., records management), and content creators.

Implementation Framework for Ministries. To support consistent practices, the corporate approach will also need to include an implementation framework for ministries. This framework will include: readiness assessment, business case content, project management structure and models, project plans including tactical approaches, performance measures and required resources.

Expected Outcomes

Table 4 identifies the anticipated outcomes of Phase 1.

Table 4
Anticipated Outcomes
Phase 1

Deliverable	Key Outcomes
EIM Functional Requirements	- Functional requirements and specifications of the software are based on business need. - EIM software is consistent with current government business models. - Standards ensure integration, interoperability, scalability, security, and deployment consistency.
EIM Policies, Standards and Guidelines	- Common principles, policies, guidelines and practices are employed for managing information in an automated environment. - Government-wide interests are maintained in areas such as metadata, classification, scheduling and disposition. - Cross-government synergies and higher-level business applications such as e-government and knowledge management are enabled.
EIM Implementation Frameworks	- Varied implementation approaches provide flexibility for ministries in addressing the EIM opportunity. - IM and EIM Frameworks are supported throughout the design of the Implementation Frameworks. - Frameworks ensure consistency and ease of implementation by using best practices.

Phase 2

Objectives

The objectives for Phase 2 are:

- revised and validated functional requirements; policies, standards, guidelines and practices based on the experience of early adopters and/or a proof-of-concept pilot;
- a digital archives strategy;
- implementation tools for ministries; and
- the selection of vendors of record

Scope

Pilot/Validate Functional Requirements. The functional requirements (as well as the policies, standards and guidelines) will be validated. Two options are available for this validation. First, a ministry may choose to pilot EIM as a "proof of concept." Alternatively, a formal assessment of current EIM implementation in ministries that have adopted EIM could be used to validate the corporate functional requirements.

Digital Archives Strategy. Strategy and plan for long-term preservation of electronic information.

Revised Policies, Standards and Guidelines. Based on the pilot/validation exercise, the policies, standards and guidelines will be revised to ensure they are consistent with business needs and robust enough to accommodate business needs across all 22 ministries.

RFP for Services Applications. Based on the validated functional requirements, a Request for Proposal will be developed to select Vendors of Record for EIM within the Government of Alberta.

Selection of Vendors of Record. One or more vendors will be pre-qualified to provide EIM services/solutions to the Government of Alberta. This will facilitate the decision-making process by ministries with respect to implementing EIM.

Expected Outcomes

The expected outcomes of Phase 2 are:

- Implementation frameworks designed in Phase 1 are tested deploying proof of concept pilots in a ministry (or ministries) that express interest.
- Frameworks are tested and refined incorporating best practices from the pilots.
- Participating ministries are left with EIM production systems once pilots are complete.

- The Digital Archives Strategy is developed.
- The EIM application software and implementation services are tendered and Vendors of Record are identified.
- A program office to support ministry implementations and administer the infrastructure is established.

Out of Scope

This project does NOT include the implementation of EIM across ministries. It is anticipated that individual ministries will move forward as business requirements demand and resources are allocated.

However, as a result of this project, ministries will be able to move to implement EIM more easily and with confidence that the direction taken is consistent with corporate goals and service delivery objectives. The expectation is that, in the long run, there will be alignment across ministries with respect to EIM.

Strategic Alignment

The project is aligned with several strategic priorities within the Government of Alberta.

Government of Alberta Business Plan

The four major policy initiatives (Economic Development Strategy, Children and Youth Initiative, Health Sustainability, and Aboriginal Policy Initiative) depend on collaboration. Without EIM, the cost of collaboration will increase and the effectiveness of collaboration will be impaired.

Individual Ministry Business Plans

The success of commitments by individual ministries depends on effective management of information. Developing a corporate approach to EIM will accelerate the speed with which ministries are able to improve information management practices to support service delivery.

ICT Strategy

The Deputy Minister Council has adopted the Government of Alberta's Information and Communication Technology (ICT) Strategy. EIM is an enabler for three of the seven strategies outlined:

- **Strategy 2 - Invest in our people.** Government will define core competencies and skills and provide training to assist employees in assuming accountability, managing information and technology investments, enhancing the value of information, and providing services to Albertans.
- **Strategy 5 - Expand access to information and services.** Albertans, businesses and public sector organizations will be able to easily access government services and information when authorized anytime, anywhere, using Internet technologies. All government services and information that can reasonably be accessible using these technologies will be offered on-line.
- **Strategy 7 - Take advantage of the strategic value of information.** Information and knowledge management will be viewed as strategic assets that are carefully developed and shared to support government decisions.

Service Alberta

The delivery of electronic services to Albertans depends on accurate and consistent management of information resources to support those services. Better

identification of information resources will also enable improved leveraging of information to support new products and services (especially services that involve multiple ministries).

Government of Alberta Enterprise Architecture

The Government of Alberta Enterprise Architecture (GAEA) establishes the need for consistent practices that can be leveraged across government to improve integrated delivery of services and improved operational efficiency. Several of the 42 core principles contained within GAEA are supported by a corporate approach to EIM within the Government of Alberta.

The processes supporting the identification, collection, management, retrieving and use of information is a fundamental business requirement across all ministries. As a result, EIM functional requirements and policies have been identified as a "Band 1"⁵ process within GAEA.

In addition, a corporate approach to EIM will have a significant impact on the success of the IT Services Coordination that is currently being planned.

Information Management Framework

EIM was identified by the Information Management Framework Task Force as a corporate priority to improve the discipline and coordination of information asset management within the government.

EIM is critical to achieving four of the management principles identified in the framework:

- **Principle 1 – Accessibility.** Information is easily accessible to those who need to use the information and are authorized to access it.
- **Principle 2 – Usability.** Information meets the demonstrated needs of employees, clients, partners and stakeholders and is timely, relevant, accurate and easy to use.
- **Principle 4 – Integrated Approach.** Information is managed throughout its entire life-cycle regardless of the media in which it is held.
- **Principle 6 – Leverage Information Assets.** Information resources will be managed to leverage the investment of the government of Alberta.

Corporate Human Resources Development Strategy

The government's Knowledge Management Framework, part of the Corporate Human Resources Development Strategy, recognizes the need for collaboration,

⁵ GAEA identifies three bands of processes. Band 1 processes are shared processes that are standardized and implemented at the corporate level. Band 2 processes are implemented consistently across government at the ministry level. Band 3 processes are unique processes to individual ministries. While establishing a corporate framework for EIM is clearly within Band 1, the actual implementation of EIM across government is a Band 2 process within GAEA.

the need to address information overload, and the need to retain and transfer knowledge of staff. EIM supports the government's ability to respond to each of these needs.

Business Resumption Planning

All ministries have developed business resumption plans. A critical component of these plans is the identification of information that is vital to the conduct of business. EIM will contribute significantly to ensuring that vital information is protected and available for business resumption.

Legislation

Several Acts impact on the management of information within the Government of Alberta. EIM will improve ability of ministries to comply with the *Freedom of Information and Protection of Privacy Act*. EIM will also enable the government to achieve the efficiencies allowed under both the *Electronic Transactions Act* and the *Evidence Act*.

Summary

Table 5 summarizes the strategic alignment of this project with these Government of Alberta initiatives.

Table 5
Summary of Strategic Alignment

Corporate/Ministry Initiative	Level of Impact*
Government of Alberta Business Plan	High
ICT Strategy	High
Service Alberta	High
Gov. of Alberta Enterprise Architecture	High
Information Management Framework	High
Knowledge Management Framework	Medium
Individual Ministry Plans	Medium
Business Resumption Planning and Risk Management	Medium
Legislation: Electronic Transactions Act	Medium
Legislation: Evidence Act	Medium
Legislation: FOIP	Medium
ICT Services Coordinator	High

* High: The project is critical to the achievement of the goal.

Medium: The project directly impacts the goal, but is not critical to its attainment.

Low: The project has an indirect impact on the achievement of the goal.

The Alberta Government is not alone in facing the challenge of increasing volume of information and difficulty in managing information assets throughout their life-cycle. Organizations in both the public and private sectors are facing the same challenges.

In developing this business plan, we reviewed what several organizations are doing to address the challenge. Our environmental analysis focused on organizations that had or were in the process of adopting integrated approaches to records and document management (the precursor to full EIM). Some of these organizations are also planning to integrate other functions of EIM (e.g., imaging, workflow, web content management) into their solution. We reviewed the experience of the following organizations:

- Alberta government departments,
- Ontario Government,
- Government of British Columbia,
- Canadian Federal Government,
- United States Federal Government,
- Government of Australia,
- European Union, and
- selected private sector enterprises.

Case profiles of selected public and private sector organizations that have adopted EIM are contained in Appendix 2.

In this section, we summarize the findings of our environmental analysis – the approaches to EIMS, critical success factors, and lessons learned.

Approaches to EIM

The review demonstrated there are differences in scope, implementation strategies, and the justification for EIM.

Scope

Most organizations begin with the focus on electronic records management. In the case of the Canadian Federal Government, numerous departments have moved beyond electronic records management to integrated electronic records and

document management. The Government of Ontario and Alberta Transportation have taken a broader approach to manage information in all media.

Fully integrated EIM (including records, documents, collaboration, workflow, imaging, web content management) solutions are just emerging – partially as a result of mergers and acquisitions among technology providers.

Implementation

Few organizations have attempted to implement EIM across the entire organization. Rather, the dominant model is to take an incremental approach – rolling out in ministries (or business units) as the business need is demonstrated.

In all cases, implementation is dependent upon clear definition of functional requirements and extensive planning in change management and training. Pilots have been used in most cases to demonstrate the proof of concept and to gain additional commitment to EIM.

Finally, it is becoming more common for enterprises to qualify vendors based on standards rather than to focus on a single provider. This approach has been taken by the U.S. Department of Defense as well as the Government of Ontario.

Cost Benefits

Organizations that adopt EIM realize significant benefits in the following three areas:

- efficiencies in work processes, and managing and disposing of information,
- effectiveness in service delivery, and
- cost reduction in terms of time taken to find information or in storage costs.

The average return on investment (break-even) for EIM is 18-24 months.

Critical Success Factors

The environmental scan identified several critical success factors for the success of EIM in the organization. These critical success factors are:

- user acceptance,
- the use of appropriate test sites,
- involvement of functional and business experts in the definition of functional requirements,
- management support,
- adequate risk assessment and communications plan,

- extensive training, and
- effective change management strategies.

These critical success factors are complimented by lessons learned on the part of those who have successfully implemented EIM. These lessons learned include:

- EIM needs to be justified on both quantitative and qualitative benefits.
- Projects are more successful when the various EIM sub-systems are integrated.
- Front line staff and users must assume ownership, participate, and manage the growth of the infrastructure.
- EIM processes and standards are essential.
- EIM involves a major cultural change – there is a need to plan for the LONG term.

Summary

The environmental analysis has influenced this project in the following four ways:

1. Develop business and functional requirements first.
2. Validate requirements with proof of concept.
3. Support an incremental approach by developing a comprehensive framework for ministries.
4. Adopt an integrated approach that includes imaging, document management, workflow, records management, web content management, links to structured data, intellectual property management and disposition (i.e., archival retention or destruction).

Moving immediately to a full cross-government implementation of EIM has been rejected because of (a) the significant costs that have not been planned for and (b) the risk associated with a complex roll-out in the current business environment.

Consequently, there are three alternatives to meet the challenge of electronic information management in the Government of Alberta. These alternatives are:

1. Status Quo
2. Corporate Approach
3. Accelerated Corporate Approach

1. Status Quo

Under this scenario, ministries simply make the decision to invest and implement EIM on an "as needed" and "as can afford" basis. Under the status quo, there is no corporate framework to guide the adoption and implementation of EIM. As a result, this alternative raises the costs of EIM significantly because each ministry must develop and/or adapt functional requirements. It also requires more resources to be deployed within each adopting ministry. As a result, ministries may select different, even inconsistent approaches to EIM, which will result in further stovepipe applications, and corporate requirements (e.g., digital archives) may not get addressed or be addressed in an *ad hoc* manner.

2. Corporate Approach

This approach invests in the development of functional requirements, policies, standards, and implementation frameworks once and then applies these to the various businesses across the government. This approach also leverages the experience of early adopters in validating the functional requirements. This "up-front" investment is planned over a two-year period (subject to funding).

3. Accelerated Corporate Approach

The accelerated corporate approach simply accelerates the development of functional requirements and associated policies, standards and practices. By making the "up-front" investment over a period of one-year, ministries who are delaying decisions until this work is done can implement more quickly.

Project Risk Assessment

Risk of Not Proceeding with Project (Status Quo)

There are presently three ministries within the Government of Alberta that are at varying stages of adopting and deploying electronic information management (EIM) solutions. Government Services, Learning, and Transportation have installations of various solutions at this time.

There are several other ministries at various stages of examining EIM solutions and many of these are expressing a high level of interest in adopting a solution within the foreseeable future.

There is a significant risk with not proceeding with the project. These risks include:

- **Increased costs to the government:** If ministries pursue EIM individually, there will be increased costs to government. This is not a wise investment strategy. There is also a risk of increased costs from adopting partial solutions (and having to add on additional tools at a later date).
- **Inability to meet service delivery commitments.** The continuation of inconsistent and weak information management practices will mean that ministries will either fail to meet service delivery requirements or it will take an excessively long time to respond to service requests from Albertans.
- **Potential for incomplete solutions:** Without a framework for EIM (i.e., each ministry is left to its own approach), there is a risk of adopting incomplete solutions and an inadequate analysis of the impacts. That is, ministries may focus their efforts on only one aspect of EIM (e.g., document management). Moreover, many ministries may lack time and resources to take the comprehensive approach to EIM, which would result in some not being able to adopt this business solution.
- **Reduced productivity:** A significant risk is reduced productivity that results from continuing the *ad hoc*, and inconsistent, management of information assets, while the volume of electronic information continues to increase.
- **Failure to meet legislative requirements.** As more and more information used in the business of government resides in electronic format, the government risks being unable to meet legislated requirements (e.g. *Freedom of Information and Protection of Privacy*). This risk is present due to the inconsistent and *ad hoc* ways of managing electronic information.

Risk of Proceeding with the Project

Corporate Approach

Several risks associated with the project can be identified. These include:

- **Lack of Senior Management Support.** This initiative will occur over a period of two years and impact ministries for several years beyond that. Because of the significant resources, executive support must be obtained prior to the project and maintained throughout the project.
- **Conflicting priorities.** There are a number of other corporate initiatives that have been initiated in recent years. These initiatives also require significant investment of money and human resources. The risk is that EIM sounds too "big" and that it can wait.
- **Inability to free-up critical business resources:** The project office will require skilled resources – those able to understand and develop business and functional requirements related to a wide variety of electronic information. The project office will also require staff skilled at analyzing business requirements in various organizational settings (i.e., ministries).
- **Inadequate Requirements Analysis:** Unlike traditional systems, which deal with data, EIM solutions may involve a myriad of media, including paper-based and electronic documents, GIS base maps, CAD drawings, photos, video, and audio clips. The requirements analysis techniques for both data and documents, while similar, are not identical. This must be clearly understood by the project team. Many EIM solutions fail because the requirements are not properly defined or understood before the implementation is initiated.
- **Focus on Technology Rather than Business Requirements:** Because EIM takes place in an electronic environment, there is a tendency to treat it as a "technology solution." It is critical that adequate business analysis occur before evaluating solutions.
- **Overstatement of Benefits:** It is not uncommon for the vendors and/or the project team to overstate the benefits possible through the application of EIM. This must be avoided at all costs. EIM is not a miracle cure for all that ails administrative processes, rather it is a business tool to improve productivity and the working environment, and to service delivery to Albertans. An organizational change management and communications plan need to be developed to ensure expectations are properly managed.
- **Funding Stopped/Delayed.** As a multi-year project, there is always the risk that funding will be stopped or delayed. If this happens, the benefits that are projected will be delayed. If funding stops for the project, several ministries may proceed on their own. In this case, there is the additional risk that the

planned approaches may not be consistent (in addition to added costs associated with independent actions).

Accelerated Corporate Approach

The same risks apply to the accelerated, corporate approach. The primary difference is the "impact" of the risk is higher given the shorter time period for the project. In some cases, the "likelihood" of the risk occurring is also higher.

Risk Comparison

For each risk, we can assess both its impact on the project and the probability of the risk occurring. This can help define and develop the mitigating actions that need to be put in place. Table 6 identifies the probability of each risk occurring and considers its impact on the project for the two viable alternatives (other than the status quo).

Table 6
Risk Assessment Comparison

Risk	Approach			
	Probability	Impact	Probability	Impact
Lack of executive support	M	M	H	H
Conflicting priorities	H	M	H	H
Inability to free up resources	M	H	H	M
Inadequate requirements analysis	L	H	M	H
Focus on technology rather than business needs	L	M	L	M
Overstatement of benefits	M	L	M	L
Funding stopped/delayed	M	H	L	H

Probability:

- H the event is highly likely to occur
- M the event is likely to occur
- L indicates that the event is not likely to occur

Impact

- H the event has a significant impact on the project
- M the event will impact the project
- L the event will have a minor impact on the project

Table 7 identifies potential mitigating strategies for each risk.

Table 7
Mitigating Strategies

Risk	Mitigating Strategies
Lack of executive support	• Executive Sponsorship • Ongoing reporting to Steering Committee and key Government of Alberta Councils • Regular risk reports
Conflicting priorities	• Effective communication strategy • Regular updates to affected communities across government
Inability to free up critical resources	• Establish project office staffed with key skills
Inadequate requirements analysis	• Adequate time built into project plan for requirements analysis • Consultative approach to developing business requirements • Consultant expertise brought to project.
Focus on technology rather than business needs	• Clear terms of reference for the project.
Overstatement of benefits	• Articulate qualitative as well as quantitative benefits. • Develop conservative estimates of quantitative benefits.
Funding stopped/delayed	• Obtain agreement in principle from Deputy Ministers of sponsor departments. • Secured funding commitment from "lead" ministries (Government Services, Innovation and Science).

Cost/Benefit Analysis

From our environmental scan, we have seen organizations realize an average Return on Investment (ROI) within 18-24 months. An example of the cost benefit for EIM, based on the experience of both private and public sector implementations, is contained in Appendix 3.

In this section, we outline the cost benefit of the project – developing a corporate approach to EIM within the Government of Alberta. Three Ministries have already justified the investment in EIM and are currently deploying solutions. Others are commencing their studies of the potential of a solution. It is for this reason that this business case has been developed. At issue is whether or not a corporate approach to EIM is warranted.

For the purposes of this analysis, three alternatives have been considered for creating a corporate approach to EIM:

1. Status Quo
2. Corporate approach to EIM (Recommended), or
3. An Accelerated Corporate Approach.

Quantitative Analysis – Financial Cost & Benefit:

A summary of the three alternatives is presented in Table 8. All relevant costs incurred by all stakeholders over the project timeframe for the corporate approach include both direct and indirect costs. Where possible, consideration has been given to the timing and certainty of these cost elements.

The analysis has applied a 10% discount factor to net present value calculations.

Table 8
Summary of Costs

Summary of Quantitative Cost/Benefit	Alternative 1: Status Quo	Alternative 2: Corporate Approach	Alternative 3: Accelerated Corporate Approach
Net Present Value of Project	\$ (12,700,000)	\$ (672,314)	\$ (640,909)

The obvious conclusion to be drawn from these alternatives is that a Corporate Approach to EIM should be pursued. Though moderately more expensive than the faster approach, Alternative 2 is the recommended option because it achieves the project objectives while taking a more prudent approach to risk management. Furthermore, the accelerated approach is dependent upon additional funding contributions being made by

- all interested Ministries; or
- ministries with current investments in EIM.

Alternative 1: Status Quo

Summary

The Status Quo assumes that each of the twenty-two ministries in the Alberta Government undertake their own EIM initiative, requiring the planning of a consistent approach, and a pilot program, prior to implementing any technology. For the sake of comparability, this Status Quo Alternative assumes no technology implementation project costs.

Though several ministries are currently making investments in EIM, we have made some assumptions about the cost and activity involved in these initiatives to simplify comparison between the Status Quo and the other two alternatives. We have assumed the following:

- investments follow the same overall project direction as that proposed in the project description (see section 3);
- projects are comparable from ministry to ministry; and
- there is sharing of information between ministries.

This alternative will see the Government of Alberta invest an estimated \$12.7 million to have each ministry conduct the necessary groundwork before implementing EIM.

Each ministry will contribute an estimated 0.8 FTEs in year 1 and 0.8 FTEs in year 2 for the activities of the SRO, FOIP Coordinator, CIO, IT Director, and IM and KM Directors where they exist. Additional effort will be required from sample business areas (it is assumed 2 FTEs in year 1 and 5 FTEs in year 2). There would also be two net new positions required for the duration of the EIM initiative to populate the ministry's project office. These individuals will manage consultants to execute the many projects required to complete the ministry's approach, proof of concept and implementation framework. Actual implementation costs would extend these investments into a third fiscal year.

Table 9 presents the summary analysis of the costs associated with the status quo.

Table 9
Summary Estimated Cost/Benefit of Status Quo

	2003-04	2004-05	
Benefits:			
Revenue			
Costs:			
Develop Corporate Approach	6,270,000	1,760,000	
Proof of Concept/Implementation Framework		6,710,000	
Ongoing Operational Costs:			
Human Resources	Not included	Not included	
Administration	Not included	Not included	
Net Benefit or Cost of Viable Alternative 1	\$ (6,270,000)	\$ (8,470,000)	
Cumulative Net Benefit or Cost	\$ (6,270,000)	\$ (14,740,000)	
Net Present Value (10% Discount Rate)			\$ (12,700,000)

For a detailed breakdown of the assumptions underlying this Alternative, see Appendix 4.

Alternative 2: Corporate Approach

Summary

Alternative 2 sees all Government of Alberta ministries leveraging experience and resources with the leadership of Alberta Government Services and Innovation and Science to develop a Corporate Approach to EIM. Once developed, each ministry will then be able to leverage consistent goals, strategies, standards and directions in the implementation of EIM to their own organization.

Alternative 2 will cost 5.3 percent of Alternative 1, an estimated \$672,000 over two fiscal years (2003-2004 and 2004-2005).

This alternative sees a two-year commitment by Alberta Government Services to create and operate a project office. This office will then hire consultants to execute a variety of projects outlined in the project description (see section 3). It is assumed that ministries will contribute staff time to this project from SROs, IT Directors, FOIP Coordinators, CIOs, IM and KM Directors.

Table 10 presents the summary costs associated with the project.

Table 10
Summary Costs of Corporate Approach

	2003-04	2004-05	
Benefits:			
Revenue			
Costs:			
Develop Corporate Approach	285,000	80,000	
Proof of Concept/Implementation Framework		305,000	
Ongoing Operational Costs:			
Human Resources		75,000	
Administration		40,000	
Net Benefit or Cost of Viable Alternative 1	\$ (285,000)	\$ (500,000)	
Cumulative Net Benefit or Cost	\$ (285,000)	\$ (785,000)	
Net Present Value (10% Discount Rate)			\$ (672,314)

For a detailed breakdown of the assumptions underlying this Alternative, please see Appendix 4.

Alternative 3: Accelerated Corporate Approach

Summary

Alternative 3 is structured the same way as Alternative 2, however, it is completed in one year, rather than two. Though this project is five percent the cost of Alternative 1, it creates increased risks associated with its accelerated pace that may outweigh the benefits of this option.

Alternative 3 costs five percent of Alternative 1 and would see the expenditure of \$641,000 over Fiscal 2003-2004. Table 11 presents the summary costs associated with accelerated corporate approach.

Table 11
Summary Costs of Accelerated Corporate Approach

	2003-04	2004-05	
Benefits:			
Revenue			
Costs:			
Develop Corporate Approach	285,000		
Proof of Concept/Implementation Framework	305,000		
Ongoing Operational Costs:			
Human Resources	75,000		
Administration	40,000		
Net Benefit or Cost of Viable Alternative 1	\$ (705,000)		
Cumulative Net Benefit or Cost	\$ (705,000)	(705,000)	
Net Present Value (10% Discount Rate)			\$ (640,909)

For a detailed breakdown of the assumptions underlying this Alternative, please see Appendix 4.

Analysis

The Benefit of Collaboration

Based on the costs identified above, accelerating a corporate approach will only cost 5% that of the status quo, not factoring in the business value of EIM. Even with a slower corporate approach (Alternative 2), the costs are still only 5.3% that of pursuing a ministry by ministry approach.

When project risks are considered, the recommended option is Alternative 2.

Qualitative Analysis – Non-Financial Benefits & Costs:

Several non-financial benefits can be associated with the adoption of EIM. The value of the corporate approach is to ensure that all ministries are able to achieve these benefits and the acceleration of these benefits to individual ministries. The qualitative benefits are:

- improved information sharing;
- improved accountability and transparency;
- improved service design and delivery;
- increased evidentiary reliability;

- risk avoidance;
- enhanced information security; and
- compliance with legislative and policy requirements.

Improved Information Sharing

Expanded sharing and reuse of information resources is enabled by comprehensive capture of government's records in all media and formats, an enhanced ability to locate and retrieve documents within ministries, a heightened ability to identify other types of information resource (such as structured data), and a new capacity to locate needed information, both structured and unstructured, across the government. Because employees are better able to find information, they are also better able to share and use it, where appropriate, with other ministries, public and private sector partners, and members of the public.

Improved Government Accountability/Transparency

EIM ensures that a complete record is kept of the government's decisions and transactions, of background data and the context within which these decisions and transactions occurred. Failure to take these steps conflicts with public expectations and accepted principles of governance. In the absence of a practical mechanism to achieve these ends, there has been an appreciable loss of accountability and transparency – in particular in regard to electronic documents.

Improved Service Design & Delivery

Availability of a much wider range of knowledge results, despite reduced staff complements within government, in better and faster program design and policy development. For private sector implementations, document management vendors claim improvements of 20 to 30 percent in time to market for new products and services.

Increased Evidentiary Reliability

New factors are increasing the need to protect the integrity and evidentiary value of electronic records. Increasingly, electronic records are being required to document legal rights and obligations, including those relating to the government, other jurisdictions, the private sector and the public. A new set of variables has been introduced in the last two years through the passage of federal and provincial legislation regarding conditions enabling the admissibility of electronic records in legal proceedings and their use as records in commercial transactions. This legislation has given further weight to an already increasing use of electronic records as the authoritative record in business and law. Some safeguards to establish the authenticity and integrity of electronic records can be established within closely managed transaction processing systems, but these are largely missing in the world of office software products. Many can be addressed through use of EIM.

Risk Avoidance

Critical errors are reduced by more complete and comprehensive access to the information required to frame policies and programs, not only within individual programs and ministries, but across government.

This extends to e-government. Without EIM tools to demonstrate due diligence in the management of the records created or received in the course of service transactions, public trust in government's delivery of reliable e-commerce may be undermined. By ensuring the preservation of electronic, as well as traditional hardcopy records and their ongoing accessibility EIM can play a critical role in electronic commerce.

As well, use of electronic records in legal proceedings points to the need not only to ensure that a full record of transactions is preserved, but that relevant records can be found. In the absence of appropriate tools to enable quick and comprehensive location of electronic records in response to discovery motions and similar actions by legal tribunals and investigative bodies, the government may incur considerable expense.

Information Security Enhancement

As noted previously, EIM is a primary vehicle for applying information security classifications to records. These classifications can be applied as metadata to records series, sub-groupings, individual record folders, and individual records. There is no other equally practical, or flexible, method for applying these classifications.

Compliance with Legislative and /Policy Requirements

EIM supports much more complete and accurate searching of records in response to access requests under the *Freedom of Information and Protection of Privacy Act* and to reduce the time required, enabling more consistent compliance with the deadlines prescribed in the *Act* for answering these requests.

EIM is clearly an important tool for eliminating premature and unauthorized disposal of records, electronic and hardcopy that have permanent value for retention by the Provincial Archives. This function is particularly important in the case of electronic records, whose disposal is frozen by the system until the archival transfer date is reached.

Table 12 identifies the linkages between these non-financial benefits and the strategic priorities of the Government of Alberta identified earlier in Section 4.

Table 12
Benefits of EIM and Corporate Strategic Priorities

Initiative and Strategy	Information Sharing	Accountability	Service Delivery	Evidentiary Reliability	Risk Avoidance	Information Security	Compliance
Government of Alberta Business Plan	✓	✓	✓		✓		
ICT Strategy	✓	✓	✓		✓		
Service Alberta	✓		✓				
Gov. of Alberta Enterprise Architecture			✓		✓	✓	
Information Management Framework	✓	✓	✓		✓	✓	
Knowledge Management Framework	✓	✓	✓				
Individual Ministry Plans	✓	✓	✓				
Business Resumption Planning and Risk Management		✓			✓		
Legislation: Electronic Transactions Act	✓	✓		✓		✓	✓
Legislation: Evidence Act				✓			✓
Legislation: FOIP	✓	✓		✓	✓		✓
ICT Services Coordinator		✓			✓		

Scope and Boundaries

Time

The analysis period is synchronized with fiscal years, commencing April 1, 2003 and ending March 31, 2005.

Geography and Organization

The locations considered relevant for this analysis are all Government of Alberta Department head office and field operations across Alberta. The analysis is limited to the 22 Ministries of the Alberta Government existing as of the date of this analysis. Note: The implications for international offices located in China, Japan, Korea, Taiwan, Germany, Mexico and the United States will be reviewed in the requirements definition.

Function

The analysis is limited to the activities related to the planning, piloting and establishing of a corporate approach to EIM.

Implementation Strategy

Implementation Plan

Tasks and subtasks for each phase of the project are identified in Table 13 and Table 14. A summary of the implementation strategy is in Appendix 5.

Table 15
Phase 1: Project Tasks and Subtasks

Task	Sub-Tasks	Timing
Prepare RFP for Contract Services	• Draft RFP • Approval of RFP • Posting on Merx • Review of Submissions • Award of Contract	April 1, 2003 – July 11, 2003
Business and Functional Requirements	• Review functional requirements of DOD, EU, other public and private organizations • Conduct functional requirement sessions with ministries and practitioner communities (estimated 20). • Draft functional requirements. • Validate functional requirements.	July 15, 2003- October 30, 2003
Draft Policies, Standards, Guidelines and Practices	• Survey of rules in other organizations • Draft policies, standards, guidelines, practices • Validate policies, standards, guidelines and practices with practitioner communities and ministry business units. • Revise draft policies, standards, guidelines and practices.	September 30, 2003 – January 30, 2004
Accountability Framework	Develop accountability framework to include: • Executives • Business Unit Managers • IM Practitioner Communities (e.g., Records Management, FOIP Coordinators, etc. • Content creators	January 5, 2004 – March 31, 2004
Implementation Framework for Ministries	• Readiness Assessment • Business case content • Project management structure/models • Tactical approaches • Performance measures • Estimated resources requirements and skills	January 5, 2004 – March 31, 2004

Table 16
Phase 2: Project Tasks and Subtasks

Task	Sub-Tasks	Timing
Prepare RFP for Contract Services	• Draft RFP • Approval of RFP • Posting on Merx • Review of Submissions • Award of Contract	April 1, 2004 – May 30, 2004
Validate Functional Requirements	• Evaluation of implementation sites (existing). • Select pilot (proof of concept) site. • Detailed review of functional requirements. • Recommend changes to functional requirements.	June 1, 2004 – November 30, 2004
Digital Archives Strategy	• Develop a digital archives strategy.	June 1, 2004 – October 30, 2004
Revised Policies, Standards, Guidelines and Practices	• Recommend changes to policies, standards guidelines and practices.	December 1, 2004 – January 30, 2005
RFP for Service Applications	• Develop RFP for EIM Service Applications • Evaluation framework • Manage RFP process	November 1, 2004 – January 30, 2005
Selection of Vendor of Record	• Conduct evaluation • Contract negotiation • Communicate with ministries	February 1, 2005 – March 31, 2005
Training Materials	• Prepare core training approaches and materials • Test and validate training materials • Prepare final training materials	February 1, 2005 – March 31, 2005

Project Responsibility

The primary responsibility for the execution of this project will be held by Information Management Access and Privacy, Alberta Government Services and the Office of the CIO, Innovation and Science.

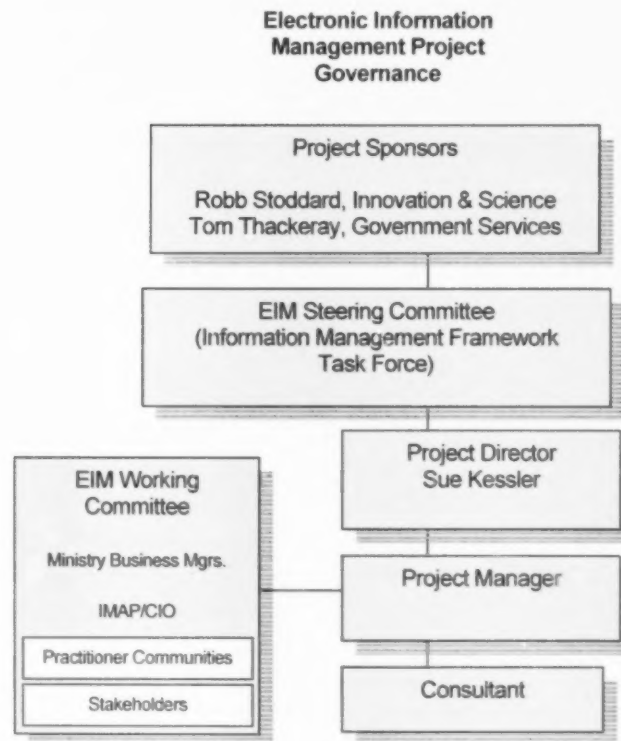
This responsibility would include the following aspects:

- A Project Director that would chair a Cross-Ministry Steering Committee.

- The Steering Committee for this project will be the Information Management Task Force.
- A Project Manager that would lead a small Project Office that would include one part-time staff during the initial two years of the project.
- To assist the Steering Committee, a Cross-Government Working Committee will be created. This Working Group will consist of representatives from business units in various ministries, individuals from the various information management practitioner communities (i.e., records management, FOIP, information management, information technology, knowledge management, archives, web content management, publishing, libraries, and ACSC).
- The Working Group will be responsible for reviewing consultant deliverables and will make recommendations to the Steering Committee.

Figure 3 illustrates the project responsibilities.

Figure 3



Conclusions

Electronic Information Management (EIM) provides the capability to manage the government's wide range of information assets to support collaboration and service delivery. Organizations that have implemented EIM have recovered their investment within 18-24 months and realized significant improvements in operational efficiencies and service delivery.

However, there are significant costs and risks associated with ministries implementing EIM on a case-by-case basis.

A wise investment strategy is to invest in the development of a corporate framework, including required functionality, guidelines and standards, and implementation tools for ministries.

This corporate approach to EIM proposed here will:

- enable a consistent and integrated approach that supports business requirements and service delivery, and
- significantly reduce costs and accelerate the benefits to ministries.

Recommendations

1. Invest in the "Corporate Approach", as it produces a greater business and operational impact while managing risks.
2. Ensure the Corporate Approach to an EIM project is identified in the Cross-Government CIO's Information Technology Plan, making it a corporate priority for all ministries to participate in its success.
3. Funding should be provided for the two-year project by Alberta Government Services and Alberta Innovation and Science.

Review & Approval Process

Review Process

This business case has been developed in consultation with the Electronic Records and Electronic Document Management Working Committee.

The business case has been reviewed by the Information Management Framework Task Force, which has representatives from all communities of information management practitioners.

The business case has been reviewed with the Chief Information Officers Council and the Administrative Services Council.

Approval Process

The business case has been approved by the project sponsors:

- Tom Thackeray, Executive Director
Information Management, Access and Privacy
Government Services
- Rob Stoddard, Chief Information Officer
Innovation and Science

Business Case Signoff

Tom Thackeray, Executive Director
Information Management, Access and Privacy
Government Services

Robb Stoddard, Chief Information Officer
Innovation and Science

Glossary of Terms

Check In / Check Out	Check-out allows only one person at a time to work on a document (check-out). When a document is "checked-in" the repository is updated and the document may be checked-out by another author.
Collaborative Authoring	The creation of information collaboratively; multiple authors working on a single document, possibly simultaneously.
Collaboration	Sharing electronic data interactively among several users in different locations. Collaboration or data conferencing is made up of whiteboards and application sharing. A whiteboard is the electronic equivalent of the chalkboard or flip chart. Participants at different locations simultaneously write and draw on an on-screen notepad viewed by everyone.
Compound Document	A document composed of a variety of data types and formats. Each data type is linked to the application that created it. See also 'Virtual Document'.
Document	A document can be word processing file, a spreadsheet, a project management schedule, a graphics file, a CAD or engineering drawing, paper scanned as an image, a slide show presentation, audio and even video, or any similar item that can be contained in a electronic file.
Document Management (DM)	A systematic method for storing, locating, and keeping track of information that is valuable to an organization through its entire lifecycle. The key characteristics of a document management system is the ability to manage information, collaborate when creating information, distribute the information, and allow secure access to the greatest number of people. DM systems track information from inception through creation, review, storage, dissemination, and destruction/archiving.
ERMS	Electronic Records Management System
EDMS	Electronic Document Management System
Geographic Information Systems (GIS)	A digital mapping system used for exploration, demographics, dispatching and tracking.
Groupware	Software that supports collaborative work. It may include conferencing, shared files, or facilities to allow several people to work in one document.
Imaging	Imaging is a method for converting paper documentation into an electronic format, using scanners and associated techniques such as Optical Character Recognition.

KM (Knowledge Management)	Knowledge Management is the process of formulating and managing your organization's intellectual assets. It is also a discipline that requires an integrated approach to identifying, managing and sharing an enterprise's information assets. These assets may include documented knowledge in databases and policies as well as expertise and experience articulated by individual employees. Knowledge management includes developing, implementing and maintaining technical and organizational infrastructures that support knowledge sharing. A four-step cycle underlies most KM implementations: 1. Harvest existing knowledge. 2. Share the knowledge across wide audiences (typically through groupware or intranets). 3. Leverage the knowledge by providing search mechanisms to locate relevant knowledge. 4. Create new knowledge by extending what has been shared and reused.
Meta Tag	An HTML/XML tag that identifies the contents of a Web page. Using a specific format, meta tags contain such things as a general description of the page, keywords for search engines and copyright information.
Metadata	Data that describes other data. Data dictionaries and repositories are examples of metadata. The meta tag that describes the content of a Web page is called metadata. The term may also refer to any file or database that holds information about another database's structure, attributes, processing or changes. Metadata usually includes information such as "creation date", "author", "department", etc.
Microfiche	Microfilm that contains multiple frames of information on a 3 x 5 type piece of microfilm.
Microfilm	The generic term used to describe any device which uses a film process and records multiple pages of data onto the film.
Optical Scanner	A device that "reads" an image and converts it to digital form.
Search Engine	Software that searches for data based on some criteria.
Structured Data	The data that exists in databases and data files. This data may be housed on a mainframe or on a file server.
Taxonomy	1) A systematic arrangement into groups or categories according to an established structure; 2) Classification, or the way your organization's knowledge is structured.
Unstructured Data	Text documents, graphics, images, audio and video formats.
Version Control	A version control system allows users to record the history of documents. Version control allows users to easily retrieve older versions to see exactly which changes have been made, when they were made and by whom.
Virtual Document	A document consisting from subcomponents which can be documents in their own right. A virtual document defines the hierarchical structure and order of its components, but can be managed as a document with its own lifecycle, security controls and version history.

Workflow

Workflow is a technology that uses electronic systems to manage and monitor business processes. It allows the flow of work between individuals and/or departments to be defined and tracked. Although documents are often used as a medium for transporting information in a Workflow system, it is mostly associated with Document Management where the Workflow system is used to track the process of creating and reviewing and distributing documents.

(Information not publicly available)

Cost Benefit of EIM

Organizations that implement EIM typically recover their investment within 18-24 months. In this appendix, we present the costs and benefits of a 15,000 seat implementation (roughly equivalent to the population of departments within the Government of Alberta). The assumptions and estimates in this analysis are based on the best available industry data and data from organizations that have implemented EIM.

Summary

Table 15 presents the cost/benefit summary for a 15,000 seat roll-out. Our estimate uses the most conservative estimates of costs and benefits.

Table 15
Summary Cost/Benefit (15,000 Seat EIM)

Benefits (over 3-year period)	\$28,700,000
Costs (over 3-year period)	\$21,347,800
Net Cost Benefit:	\$7,352,200

Costs

The costs associated with EIM include hardware costs, software costs, and ongoing maintenance costs (see Table 16).

Table 16
Costs (15,000 Seat EIM)

Year One Costs	15,000 Seat Rollout
Hardware (R/DMS)	\$8,442,000
Hardware (Federated Search)	\$1,251,000
Software* (R/DMS)	\$4,000,000- \$7,050,000
Software (Federated Search)	\$516,000
Implementation, Evaluation & Support	\$1,293,000
<i>Total</i>	\$16,512,000-\$18,562,000
Years Two & Three Costs	
Ongoing support	\$121,900
Software Maintenance/ Technical Support	\$871,000-\$1,271,000
<i>Total</i>	\$992,900-\$1,392,900
Cost Aggregated Over Three years	
<i>Total</i>	\$18,497,800-\$21,347,800

Benefits

The most common quantified benefits of EIM are related to cost savings in locating information and the cost reduction in storage of records. In this analysis, we only examined the cost savings associated with spending less time searching for information.

CIO Magazine cites that "the average executive spends 82 frustrating minutes per day searching for information." According to a recent Gartner Group report, "a conservative estimate is that knowledge workers spend 10 percent of their time just looking for the information they need to perform a task or make a decision."⁶ Assuming an average annual cost in salary and benefits of \$50,000 per employees and that implementation of EIM will reduce the costs of locating information by a conservative estimate of 25 per cent, this alone would result in significant savings (see Table 17).

Table 17
Cost Savings of EIM
15,000 Seat EIM**

Size of Implementation	Year One*		Year Two		Year Three		Total – Three Years
	FTE's	Salaries & Benefits	FTE's	Salaries & Benefits	FTE's	Salaries & Benefits	Salaries & Benefits
15,000 staff	124.0	\$6,200,000	225	\$11,250,000	225	\$11,250,000	\$28,700,000

- * Based on rollout to staff beginning month six and initial migration of selective migration of previous two years' records into EIM (costs of migration incorporated in implementation costs).

** These estimates are based on the experience of other organizations that have implemented EIM and have been extrapolated to apply to 15,000 staff.

Detailed Financial Analysis

Alternative 1 Budget Breakdown by Phase

	2003-04	2004-05
Ph 1 Develop Corp Approach	\$ 6,270,000	\$ 1,760,000
Project Office	-	-
50% Project Coordinator (\$85,000)	935,000	935,000
50% PM (\$75,000)	825,000	825,000
Consulting Projects	-	-
Functional Requirements	1,650,000	-
Policies Standards Guidelines	1,100,000	-
Accountability Framework	660,000	-
Implementation Framework	1,100,000	-
Ph 2 Proof of Concept and Implementation Framework		\$ 6,710,000
Evaluation		1,650,000
Validation of Functional Requirements		1,100,000
Policy Refinement		1,100,000
RFP for services application		880,000
selection for vendors of record		880,000
Training program		1,100,000
Ph 3 Implementation		
Contract and RFP templates		
Ministry deployment in EDMS cost benefit		
Ongoing Operational Costs		
Human Resources		
PM		
PM		
Admin		
% of Salaries	5%	5%

Alternative 2 Budget Breakdown by Phase

	2003-04	2004-05
Ph 1 Develop Corp Approach	\$ 285,000	\$ 80,000
Project Office		
50% Project Coordinator (\$85,000)	42,500	42,500
50% PM (\$75,000)	37,500	37,500
Consulting Projects		
Functional Requirements	75,000	
Policies Standards Guidelines	50,000	
Accountability Framework	30,000	
Implementation Framework	50,000	
Proof of Concept and Implementation Framework		
Ph 2		\$ 305,000
Evaluation		75,000
Validation of Functional Requirements		50,000
Policy Refinement		50,000
RFP for services application		40,000
selection for vendors of record		40,000
Training program		50,000
Ph 3 Implementation		
Contract and RFP templates		
Ministry deployment in EDMS cost benefit		
Ongoing Operational Costs		
Human Resources		
PM		
Admin		
% of Salaries	5%	5%

Alternative 3 Budget Breakdown by Phase

	2003-04	2004-05
Ph 1 Develop Corp Approach	\$ 285,000	-
Project Office		-
50% Project Coordinator (\$85,000)	42,500	-
50% PM (\$75,000)	37,500	-
Consulting Projects		-
Functional Requirements	75,000	-
Policies Standards Guidelines	50,000	-
Accountability Framework	30,000	-
Implementation Framework	50,000	-
Proof of Concept and Implementation Framework		
Ph 2	\$ 305,000	-
Evaluation	75,000	-
Validation of Functional Requirements	50,000	-
Policy Refinement	50,000	-
RFP for services application	40,000	-
selection for vendors of record	40,000	-
Training program	50,000	-
Ph 3 Implementation		-
Contract and RFP templates		-
Ministry deployment in EIM cost benefit		-
Ongoing Operational Costs		
Human Resources		-
PM		-
PM		-
Admin		-
% of Salaries	5%	5%

Ministry Staff Involvement

For all 3 scenarios, the following staffing assumptions have been made. Alternative 1 assumes this is replicated 22 times, while Alternatives 2 and 3 assume that the staff effort is dedicated to the Corporate Approach.

Year	1	2
Ministry Staff involved (FTEs)	2.87	5.88
SRO	0.50	0.50
FOIP Coordinator	0.25	0.25
CIO	0.07	0.07
IT Director	0.05	0.07
Sample Business Areas	2.00	5.00

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Governance	Phase 1 2003-2004	Phase 2 2004-2005	2005-2008
	EIM Steering Committee (IMR Task Force)		
	Cross Government EIM Working Committee		
	Project Office (IMAP - Government Services)		
Project Tasks	Business and Functional Requirements	Final/Module Functional Requirements Policies Approvals	Program Office
	Draft Policies Standards Guidelines	Multi/Module Policies Standards Guidelines as Needed	
	Accountability Frameworks	HR IT for Government Applications	
	Implementation Frameworks (Ready)	Digital Archives Strategy	Qualification of Working of Business
Communications and Change Management	Quarterly Reports to Steering Committee, Ad Hoc/Advisory Services Council, CIO Council, IMAG and others		
	Consult with Ministers		
	Requirement Communications Page		
	Training		
Deliverables	- Government Functional Requirements - Final/Module EIM Policies Standards Guidelines and Frameworks - Approved and Implemented for Business (Ready)	- Digital Archives Strategy - HR IT for Government Applications Council - Final/Module Policies Standards Guidelines and Frameworks based on PM2 - Training Materials	- Contracts for business implementation - Roll out of selected modules - Evaluation and lessons learned to inform future roll outs - Updated versions of record

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